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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/570,590	10/26/2006	Nathan J. Wrench	286997US6PCT	9796
22850 7590 03/17/2010 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER BERTHEAUD, PETER JOHN	
			ART UNIT 3746	PAPER NUMBER
			NOTIFICATION DATE 03/17/2010	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/570,590	Applicant(s) WRENCH ET AL.	
	Examiner PETER J. BERTHEAUD	Art Unit 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>7/11/06, 5/13/09</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 10-18 in the reply filed on 12/2/2009 is acknowledged. No claims are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species.

Claim Objections

2. Claim 17 is objected to because of the following informalities: The phrase "and moving the piston" at the end of claim 17 should be changed to --and moving with the piston--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 14-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Both claims 14 and 15 contain the limitations "a maximum dose" referring to "a required additive volume". The claims state that the capacity of the pump is either lower than or equal to "a maximum dose". These limitations are indefinite. This "dose" or "required volume" has not been defined by the claims from which 14 and 15 depend; thus, any pump capacity could be considered

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lower than or equal to “a maximum dose”. Therefore, it can be interpreted that any pump can dispense the required additive volume in one or more pump cycles.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 10 and 12-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Jorgensen 4,336,000.

Jorgensen discloses a pump comprising: a piston 24; a cylinder 23; and an actuator (56) for moving the piston 24 axially in the cylinder 23, wherein the actuator is a high resolution linear actuator (see col. 7, lines 37-43); wherein said pump is a syringe pump of which the piston 24 contacts a solid surface at an end of each dose cycle; wherein the linear actuator is driven by a rotary electric motor 54 through a gear reduction (see 55); wherein said pump has a capacity equal to a maximum dose required so that a required additive volume is always dispensed through only one cycle of the pump; wherein said pump has a capacity lower than a maximum dose so that a required additive volume is dispensed through one or more pump cycles (see col. 5, lines 29-32 and col. 6, lines 43-48).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 11-12 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jorgensen 4,336,000 in view of Taplin 3,250,225.

Jorgensen discloses the invention as discussed above. However, Jorgensen does not teach the following valve and seal limitations taught by Taplin.

Taplin teaches a pump assembly comprising: a manifold having at least one inlet 4 and one outlet check valve 5 that are passive, one-way valves, a piston 7, a cylinder 1, and a seal 12 to ensure tightness between the piston 7 and the cylinder 1; wherein the seal 12 is a low friction dish seal having at least one portion attached to the piston 7 (see 13 and 14) and moving with the piston 7; wherein said pump is a syringe pump of which the piston 7 contacts a solid surface at and end of each dose cycle.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have modified the assembly of Jorgensen by implementing one-way valves in paths to and from the pump chamber, and a dish seal onto the piston, as taught by Taplin, in order to simplify the assembly and to create a better seal between the piston and the cylinder. Furthermore, having an inlet and an outlet valve in two paths extending from a pump chamber is well known in the art.

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9. Claims 10-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taplin 3,250,225 in view of Jorgensen 4,336,000.

Taplin discloses a pump assembly comprising: a manifold having at least one inlet 4 and one outlet check valve 5 that are passive, one-way valves, a piston 7, a cylinder 1, and a seal 12 to ensure tightness between the piston 7 and the cylinder 1; wherein the seal 12 is a low friction dish seal having at least one portion attached to the piston 7 (see 13 and 14) and moving with the piston 7; wherein said pump is a syringe pump of which the piston 7 contacts a solid surface at an end of each dose cycle. However, Taplin does not teach the following pump assembly limitations taught by Jorgensen.

Jorgensen teaches a pump comprising: a piston 24; a cylinder 23; and an actuator (56) for moving the piston 24 axially in the cylinder 23, wherein the actuator is a high resolution linear actuator (see col. 7, lines 37-43); wherein said pump is a syringe pump of which the piston 24 contacts a solid surface at an end of each dose cycle; wherein the linear actuator is driven by a rotary electric motor 54 through a gear reduction (see 55); wherein said pump has a capacity equal to a maximum dose required so that a required additive volume is always dispensed through only one cycle of the pump; wherein said pump has a capacity lower than a maximum dose so that a required additive volume is dispensed through one or more pump cycles (see col. 5, lines 29-32 and col. 6, lines 43-48).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have modified the assembly of Taplin by implementing a piston

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driven by a linear actuator, as taught by Jorgensen, in order to more accurately dispense the working fluid.

10. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lemaire 5,421,295 in view of Jorgensen 4,336,000.

Lemaire discloses a fuel system comprising a liquid fuel additive dosing pump comprising a piston (see abstract). However, Lemaire does not teach the following pump structure taught by Jorgensen.

Jorgensen discloses a pump comprising: a piston 24; a cylinder 23; and an actuator (56) for moving the piston 24 axially in the cylinder 23, wherein the actuator is a high resolution linear actuator (see col. 7, lines 37-43)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have modified the assembly of Lemaire by implementing a piston driven by a linear actuator, as taught by Jorgensen, in order to more accurately dispense the working fluid.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PETER J. BERTHEAUD whose telephone number is (571)272-3476. The examiner can normally be reached on M-F 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/
Supervisory Patent Examiner, Art
Unit 3746

PJB
/Peter J Bertheaud/
Examiner, Art Unit 3746